

# Reading Data from Mailbox

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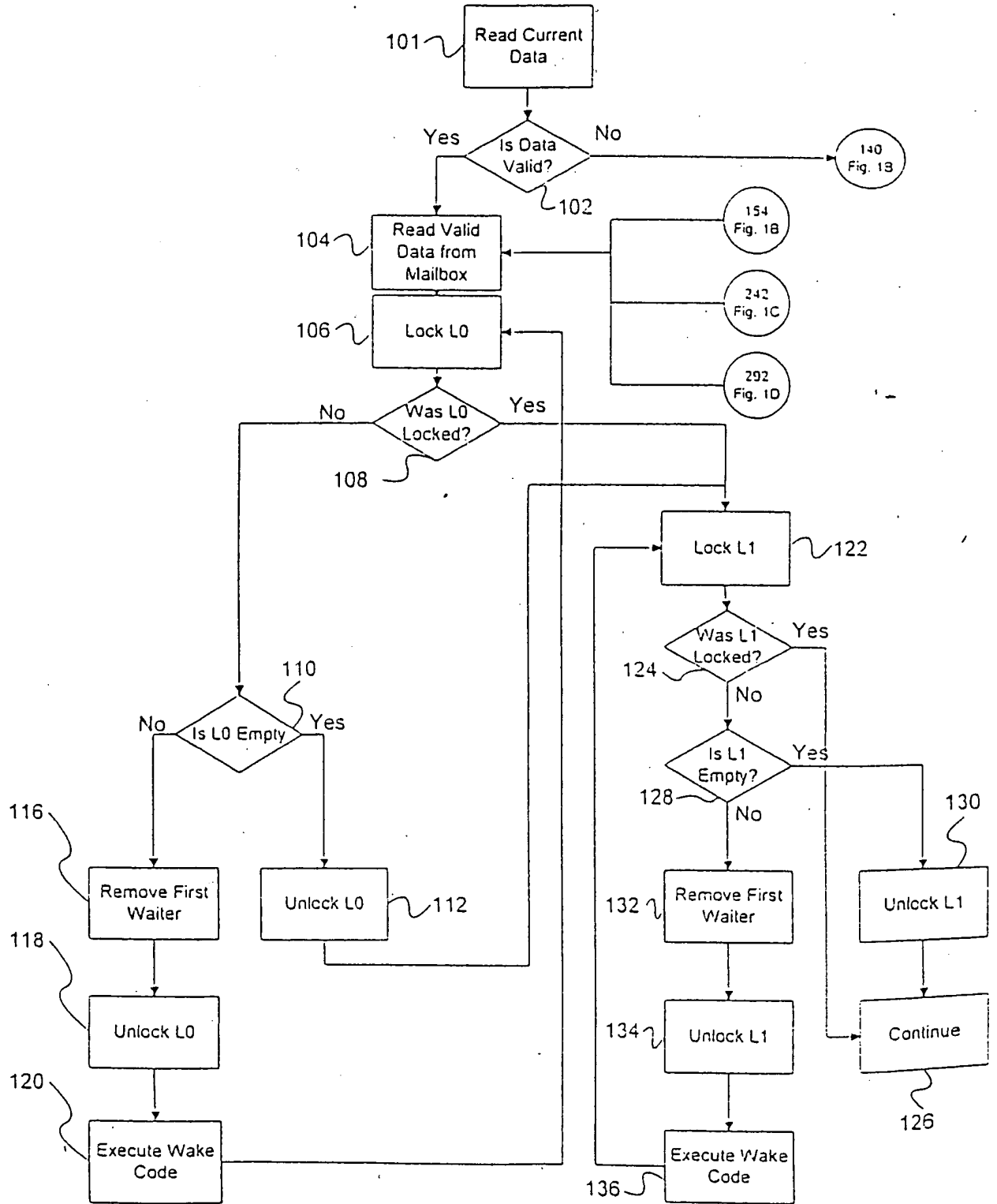


Fig. 1A

Reading  
Data from  
Mailbox

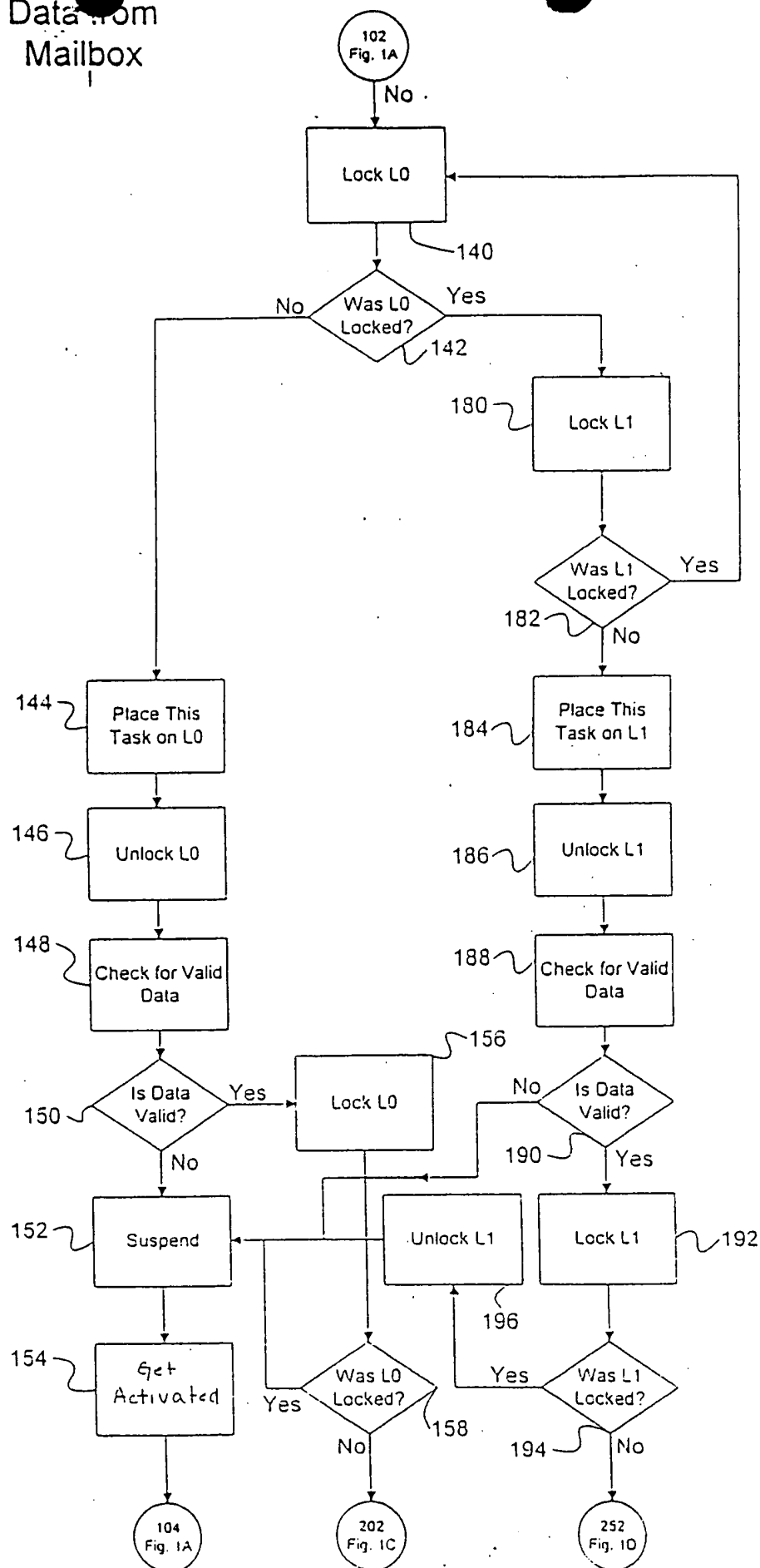


Fig. 1B

# Reading Data from Mailbox

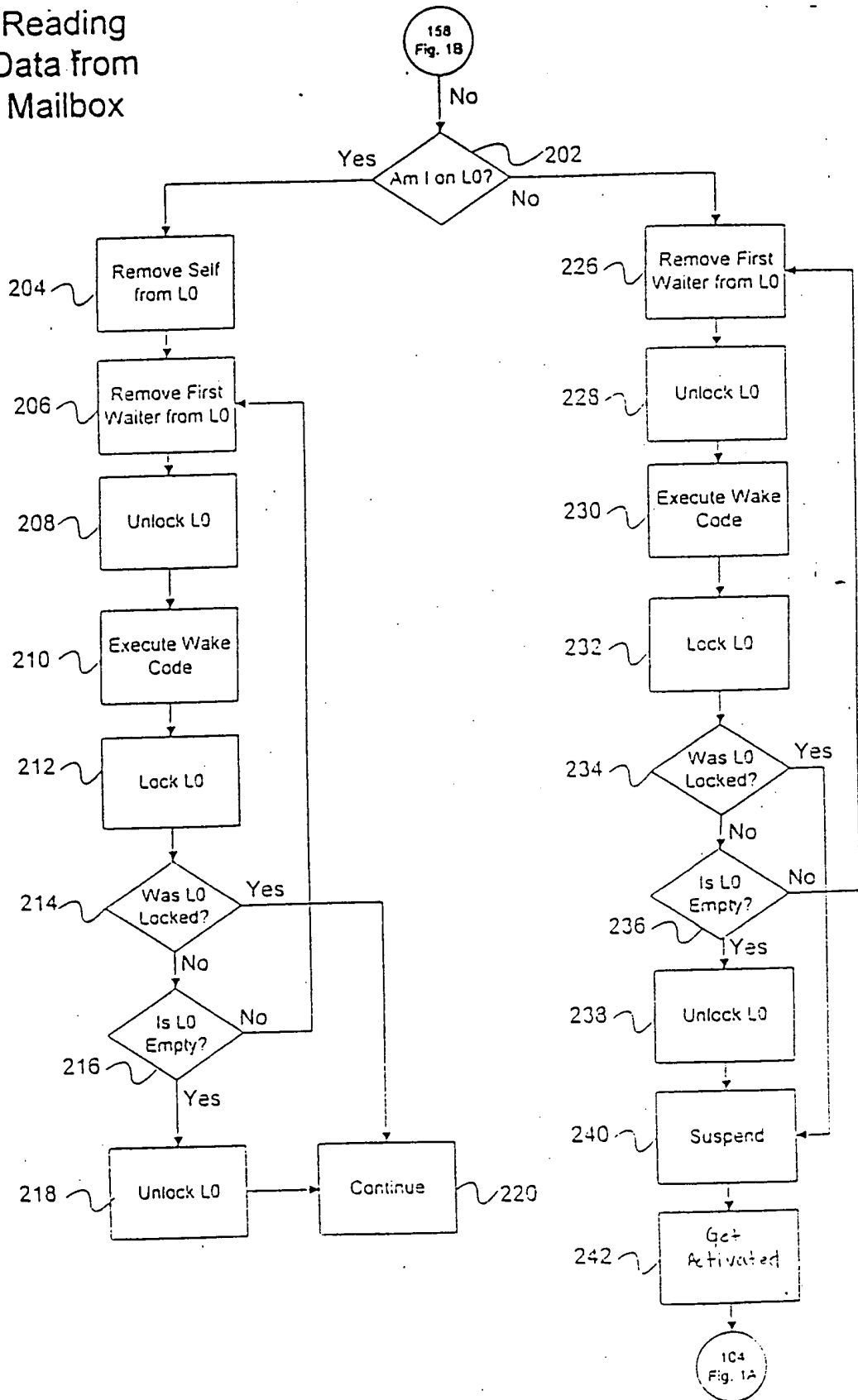


Fig. 1C

# Reading Data from Mailbox

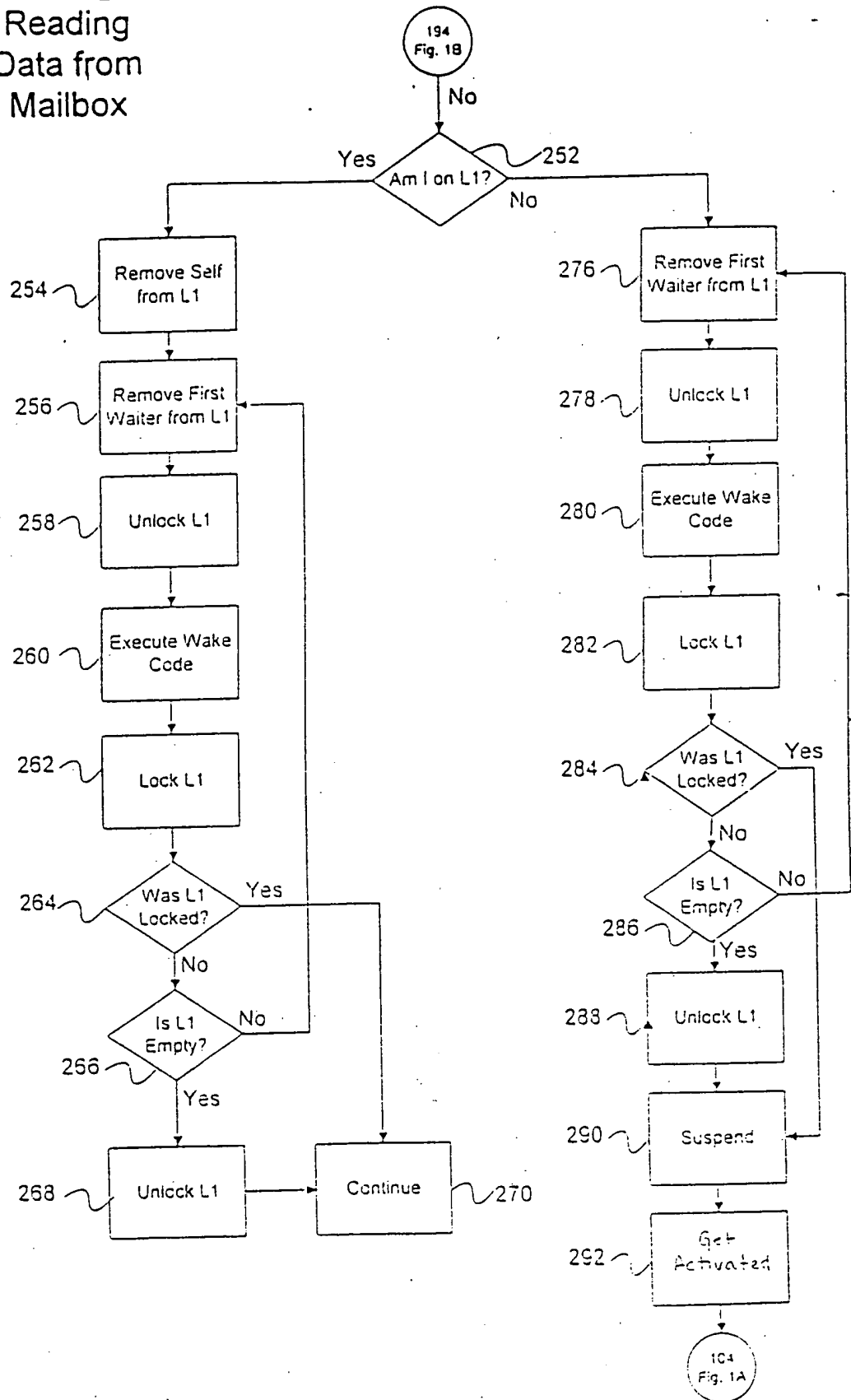


Fig. 1D

# Placing Data in Mailbox

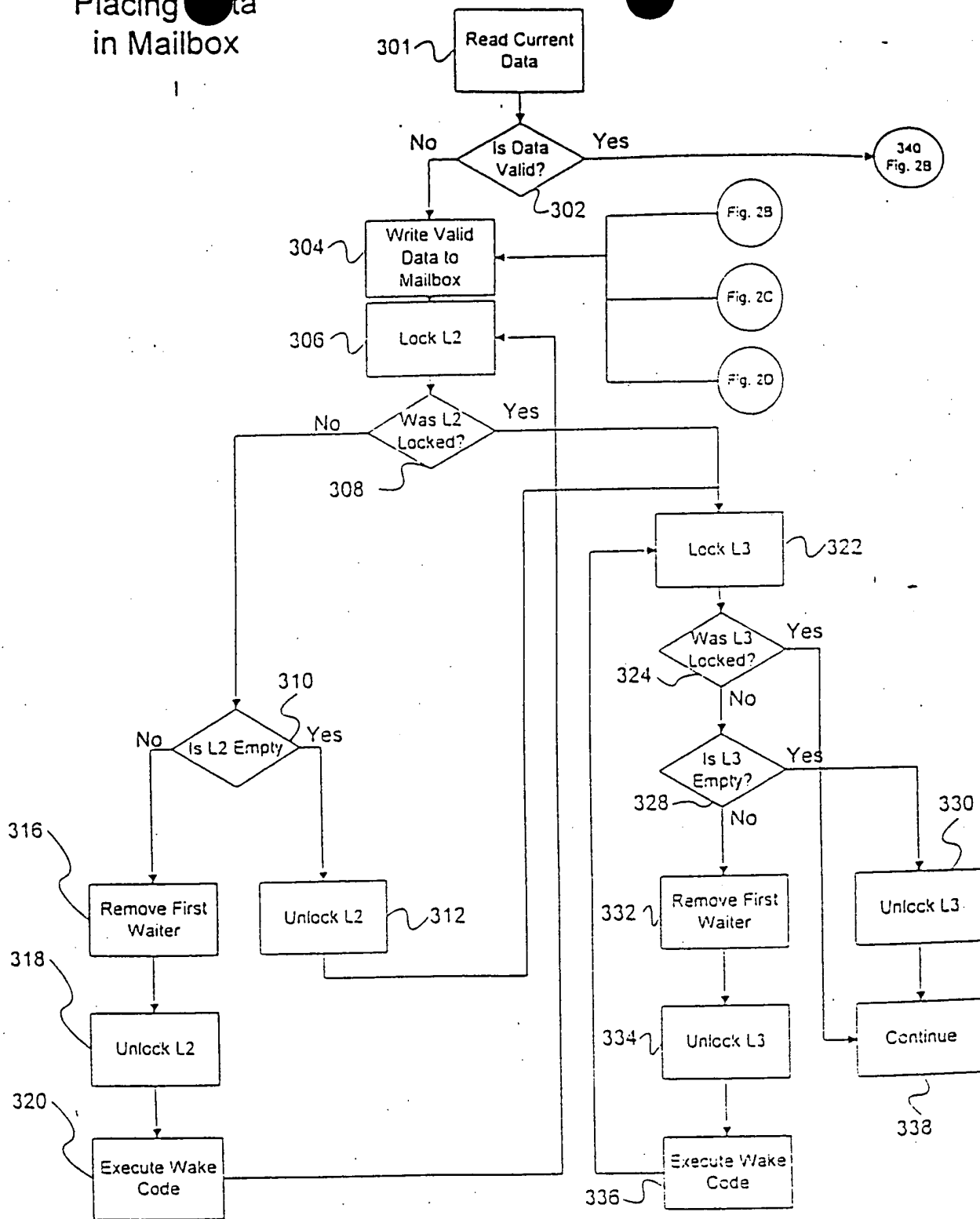


Fig. 2A

# Placing Data in Mailbox

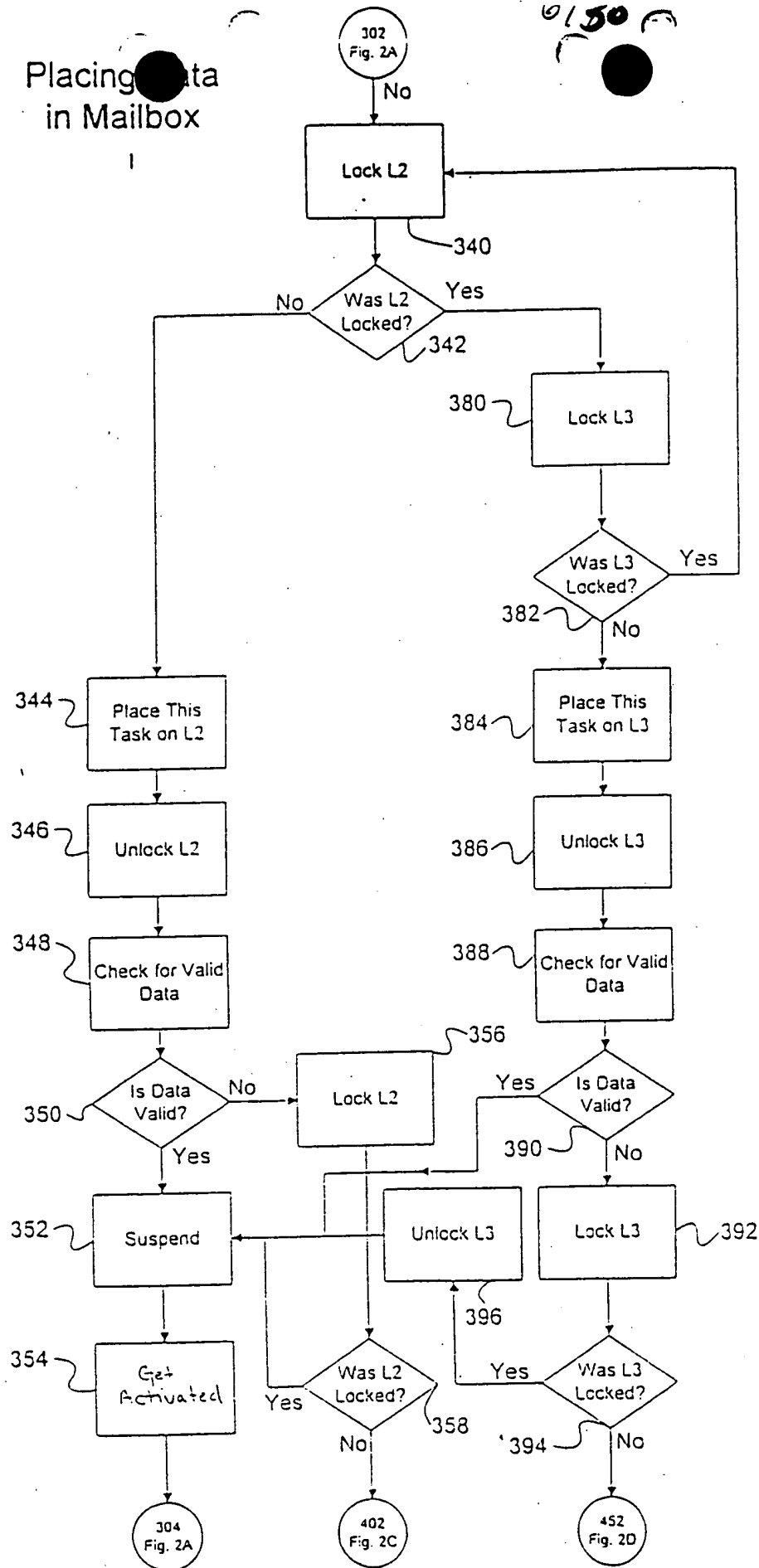


Fig. 2B

Placing Data  
in Mailbox

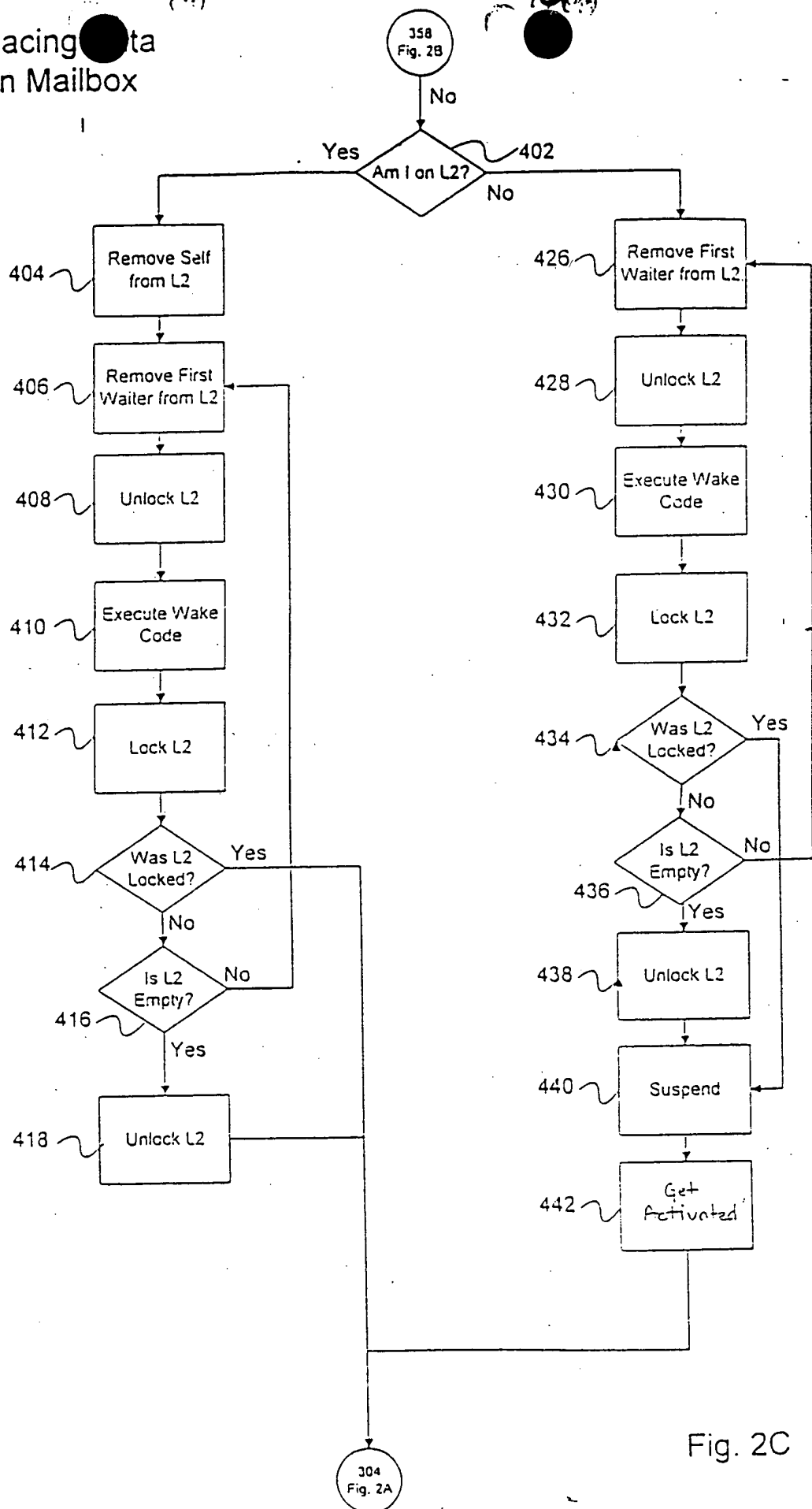


Fig. 2C

Placing a  
in Mailbox

394  
Fig. 2B

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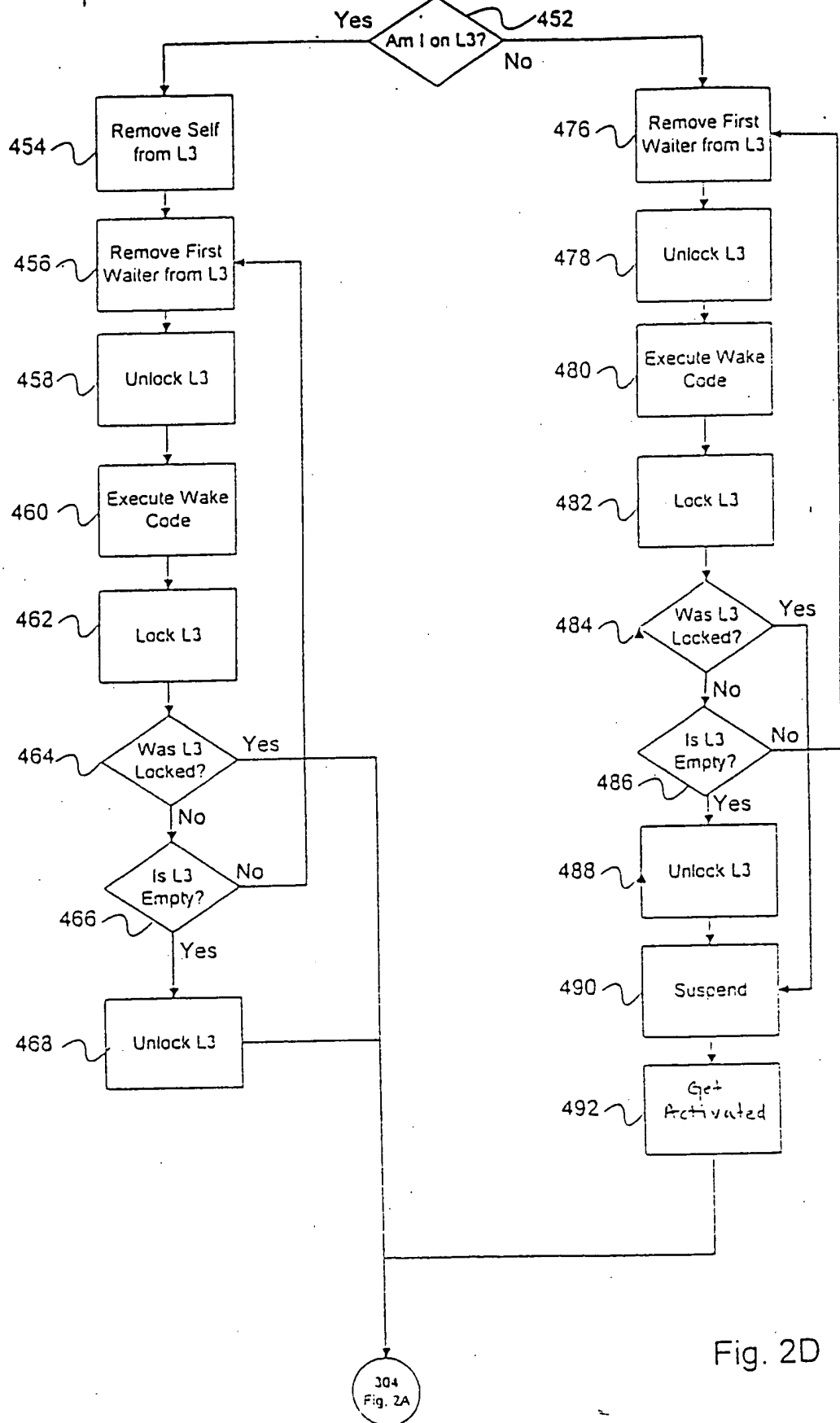
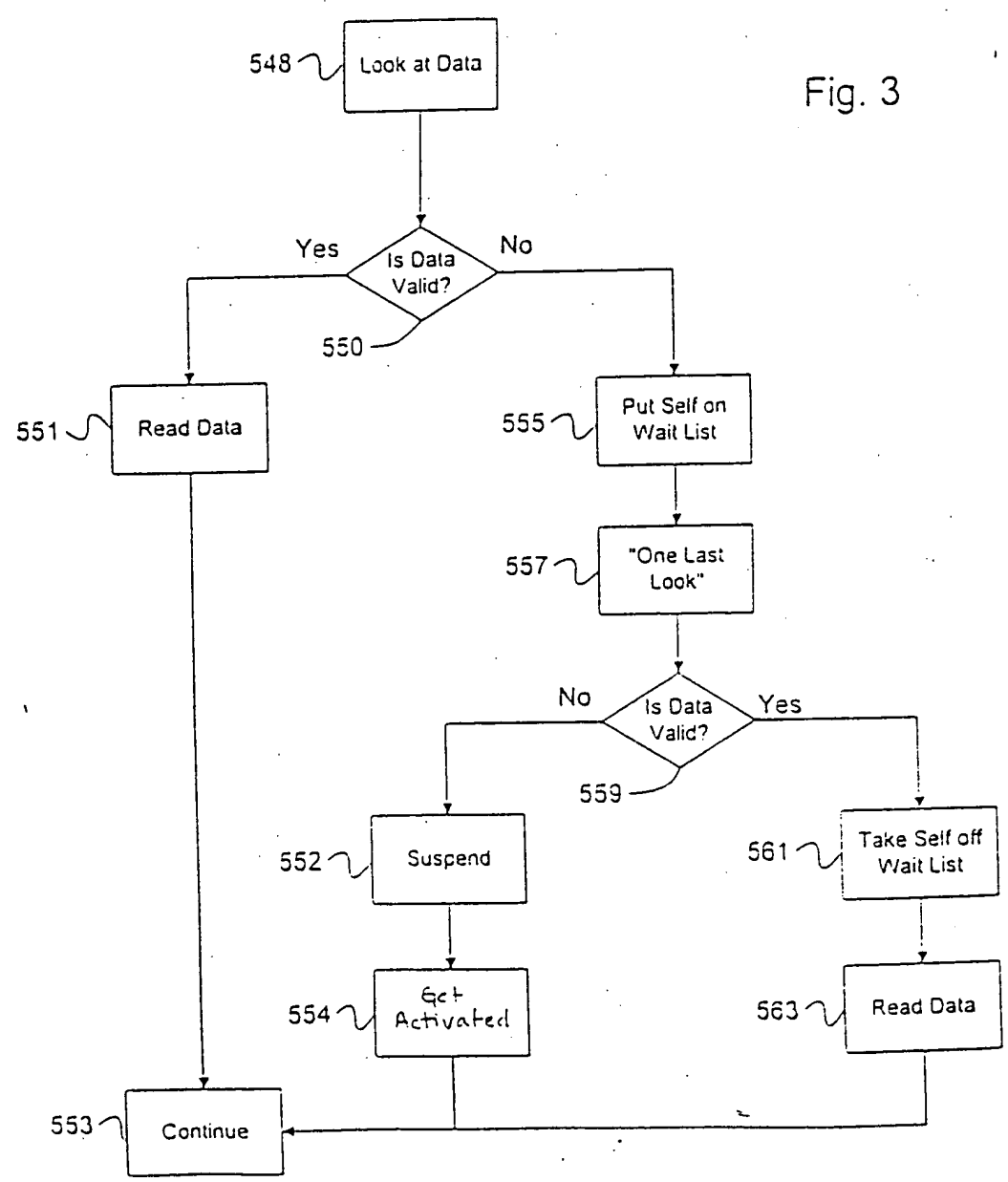


Fig. 2D



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Fig. 3



Continuation 1  
NOT WRITE

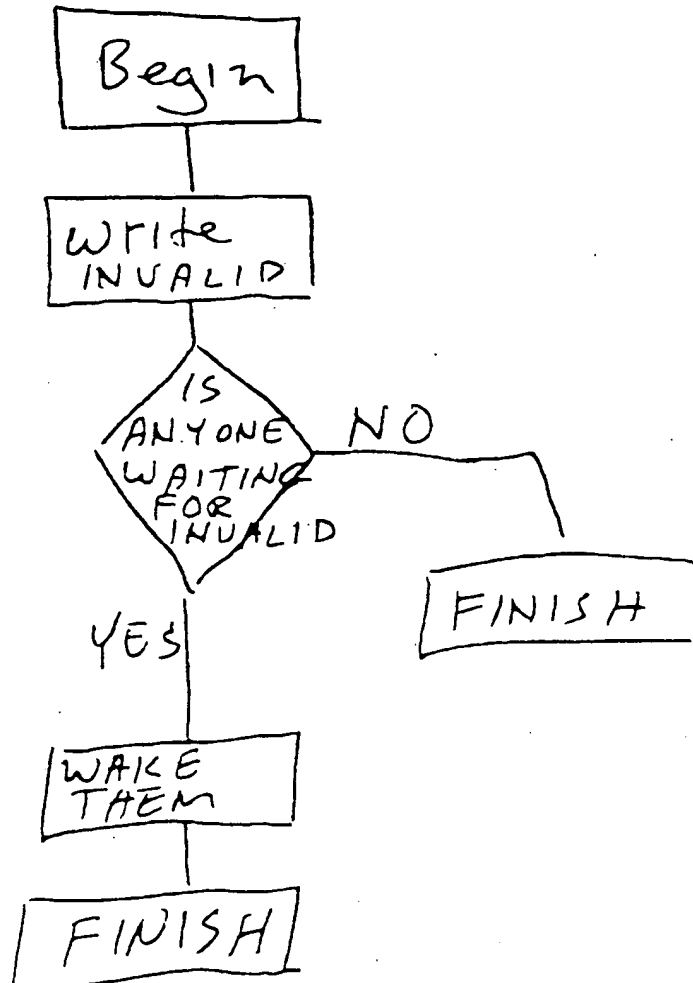


Fig 4

NOT READ

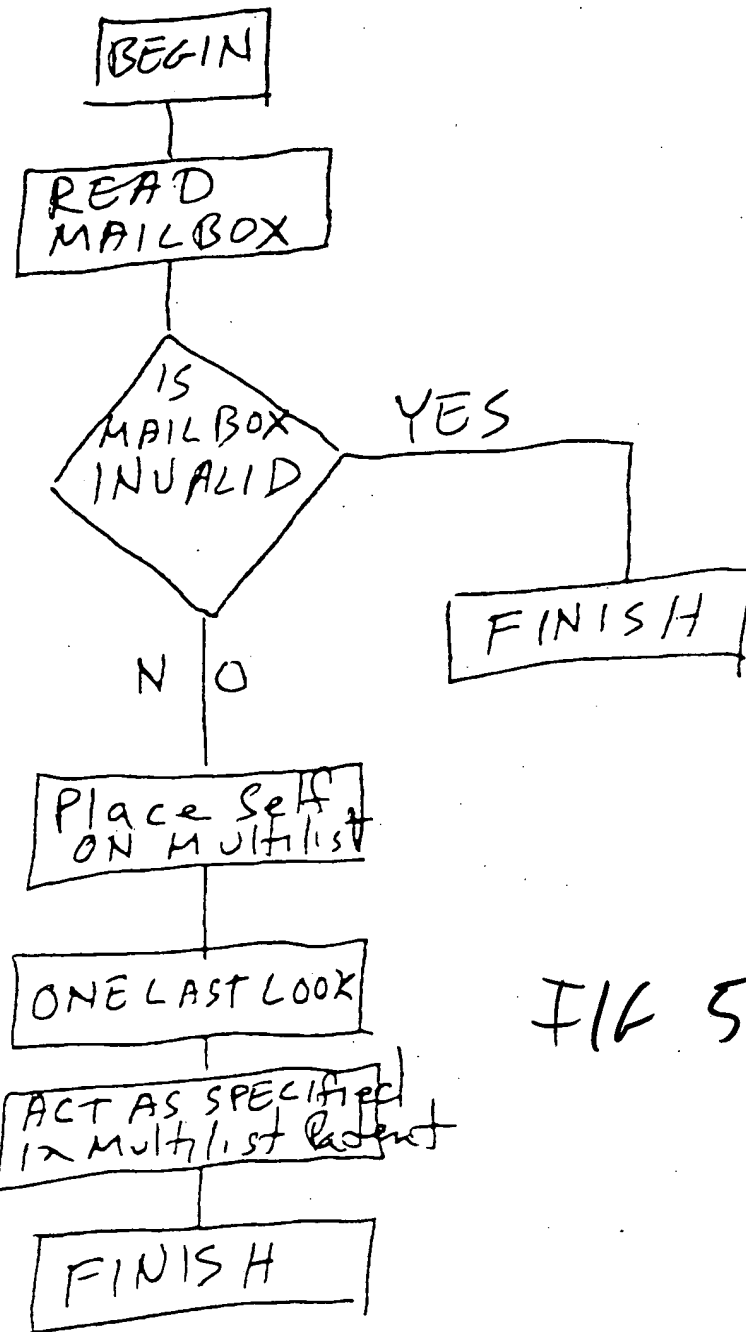


FIG 5

00729545-40400





# Continuation 2,3

## Possible Memory Organization

Row Pointer  
Column Pointer

CELL

object

Value
Multilist
Code, Ptr
Location Ptr

NEIGHBOR PTR
NEIGHBOR PTR
!
NEIGHBOR PTR
<sup>EVEN</sup> LIST COUNTER
<sup>EVEN</sup> LIST
<sup>ODD</sup> LIST COUNTER
<sup>ODD</sup> LIST
TICK counter
+2 LIST counter
+3 LIST counter
+2 LIST
+3 LIST

Fig 8

Cont. 2

# Cell Behavior

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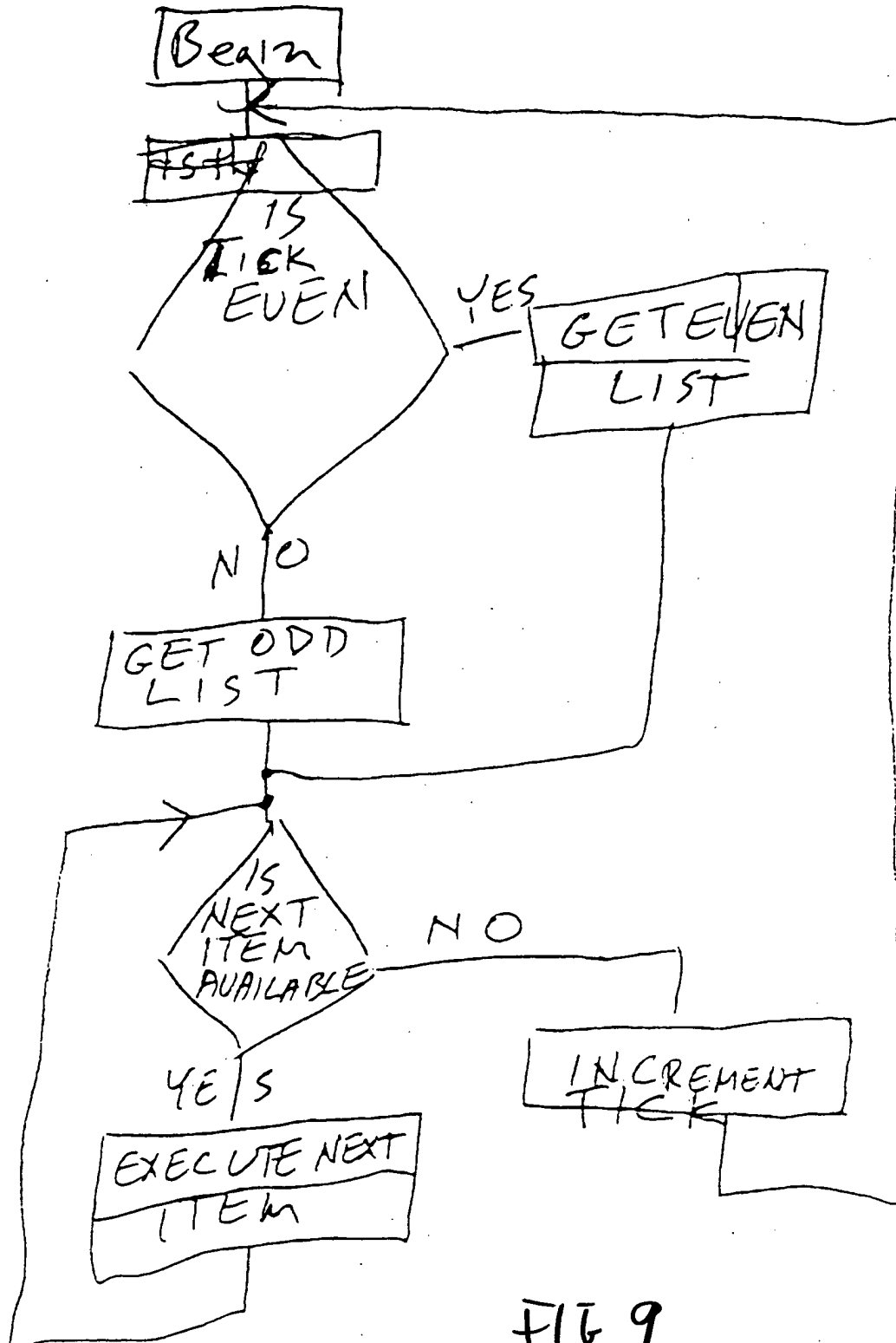


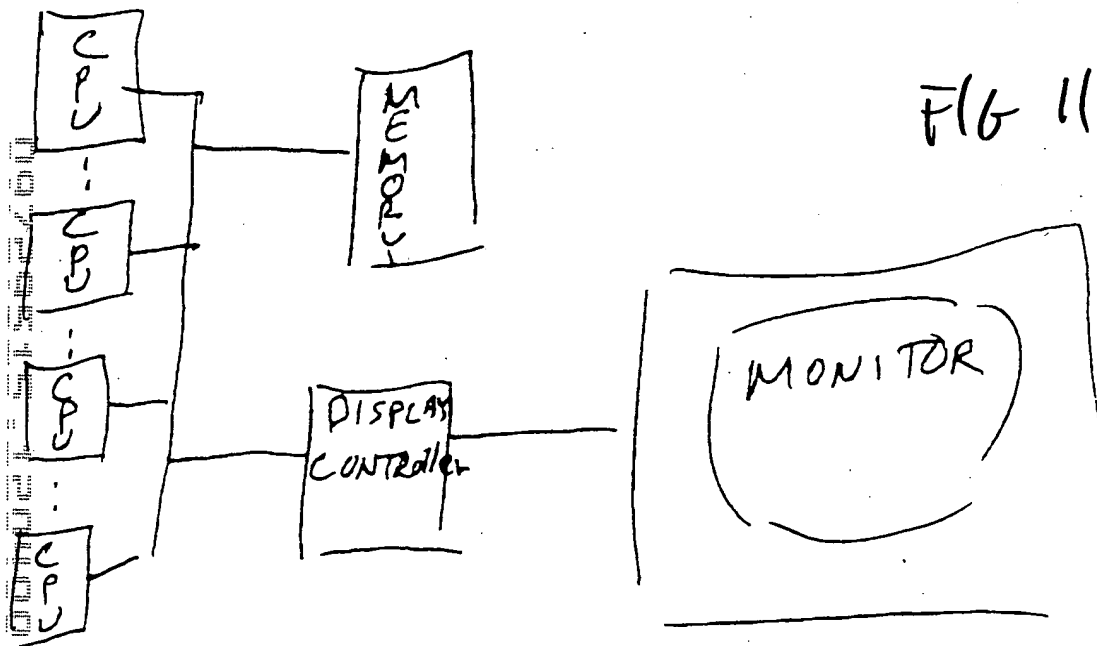
FIG 9



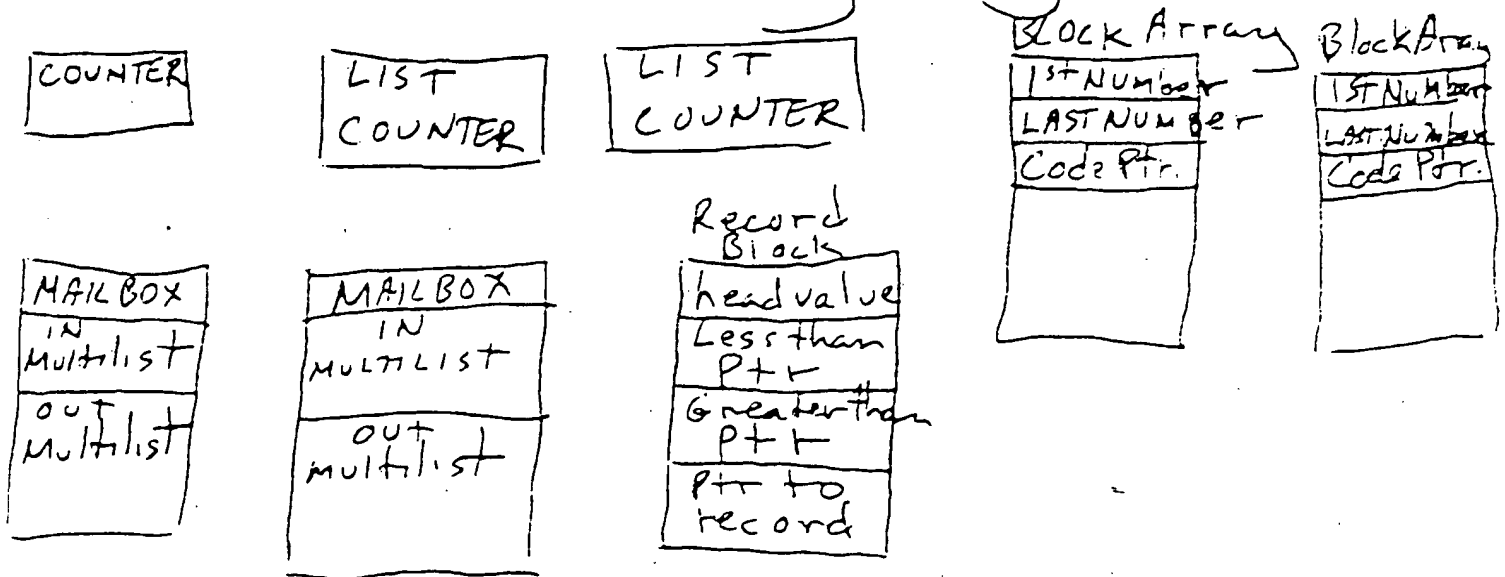


# Look Free Record<sup>17/30</sup> Management

## Possible Physical Hardware



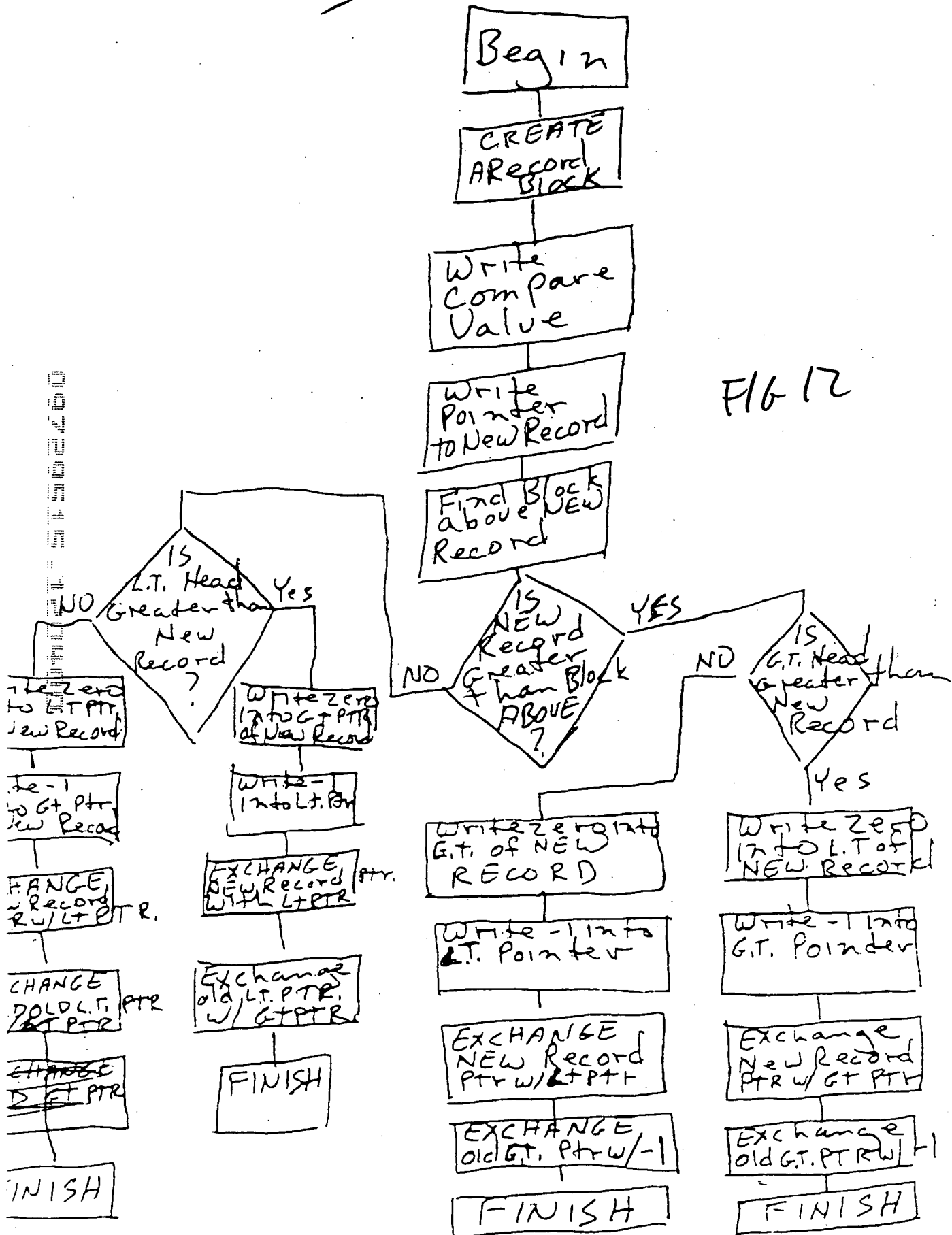
## Possible Memory Organization



# Writing a Record

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FIG 12



# Reading a Record 19/30

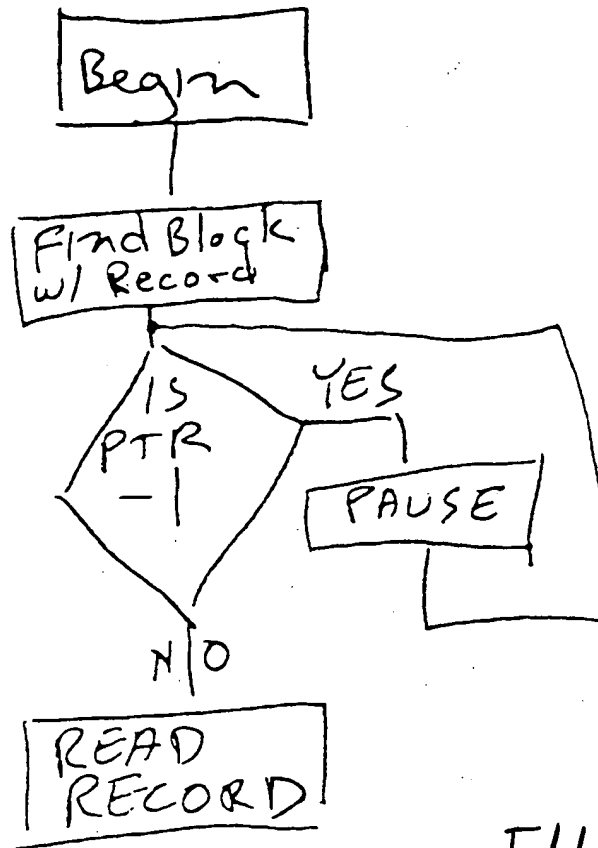


Fig 13

Adding a Value to a Record

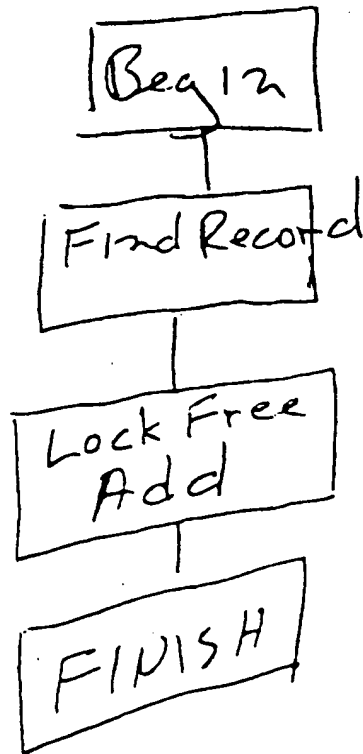


FIG 14



## PERFORMING MULTIPLE OPERATIONS

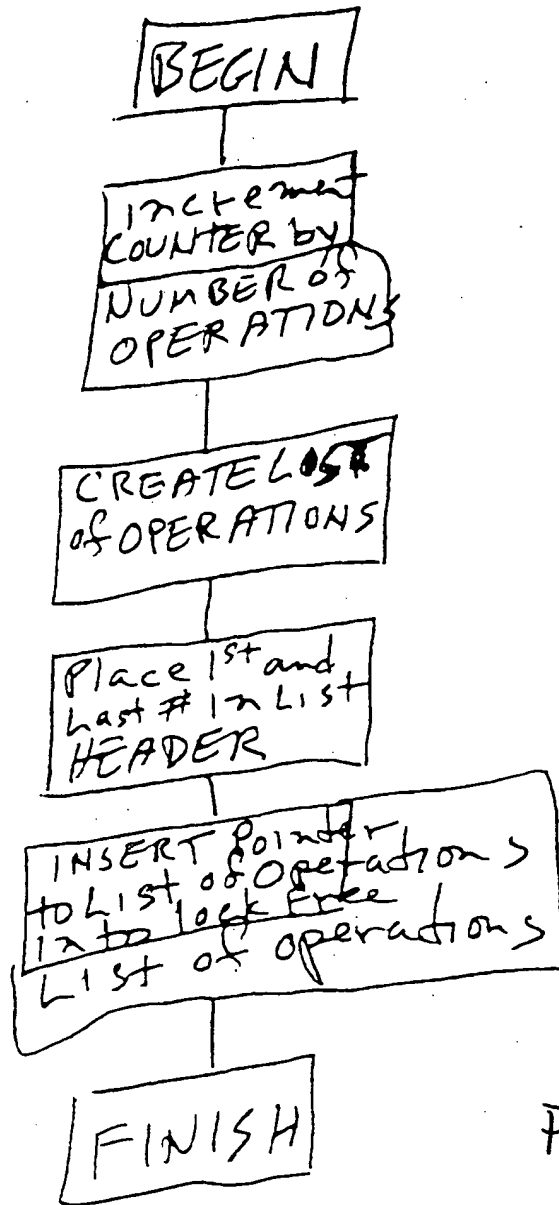
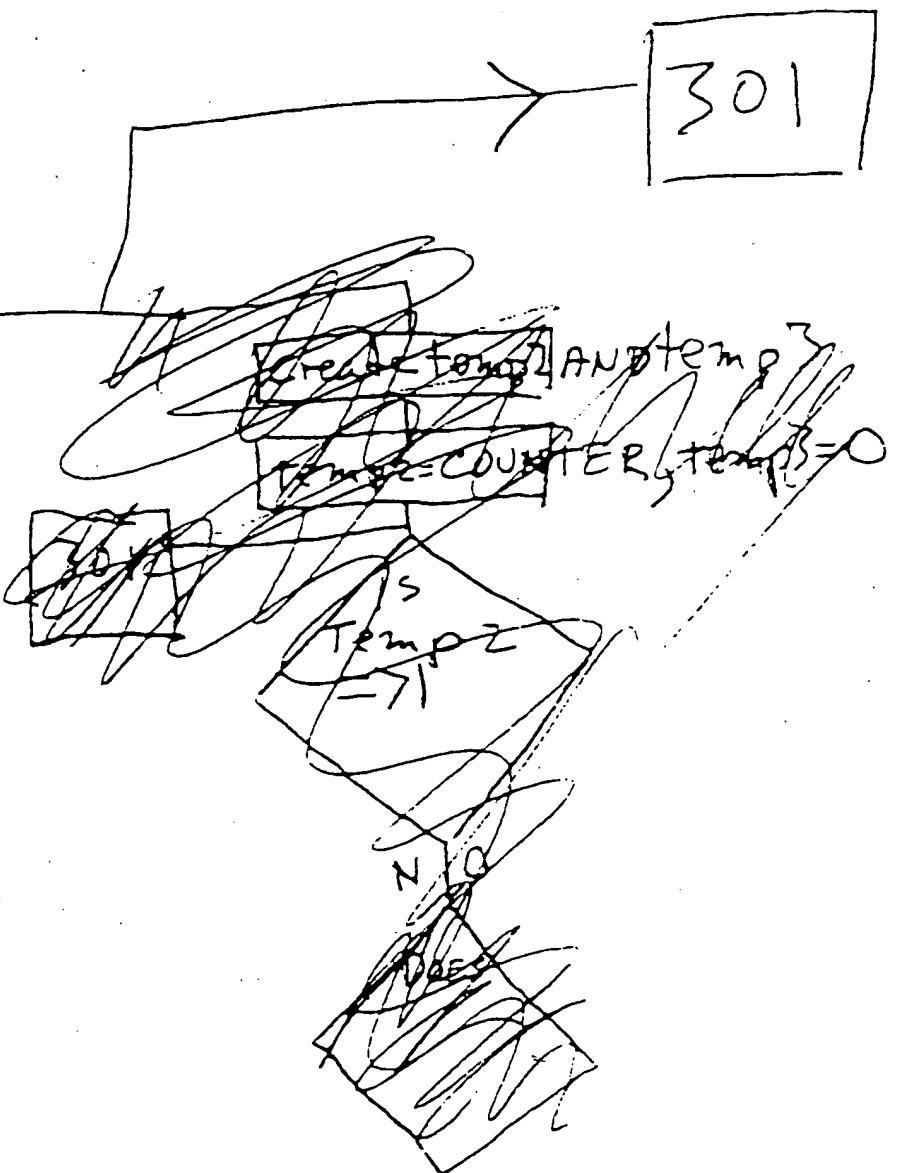
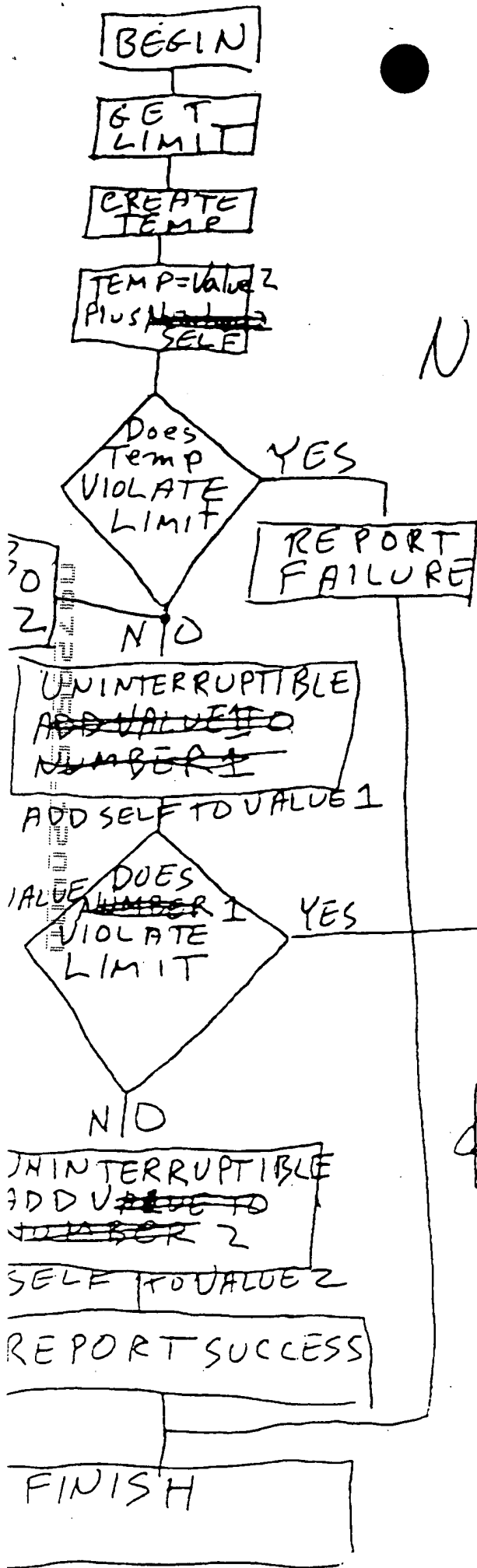


FIG 16

# ADDING A NUMBER

FIG 17



PLACE SELF ON LIST  
WHERE COUNTER INDICATES

MARK SELF NOT FAILED

SUBTRACT SELF FROM  
VALUE 1

PAUSE

CHANGE SELF TO ZERO

~~CHECK TO~~

~~REPORT FAILURE~~

F/NISH

MARKED  
FAILED

NC

302

[illegible]

FLG-18



301

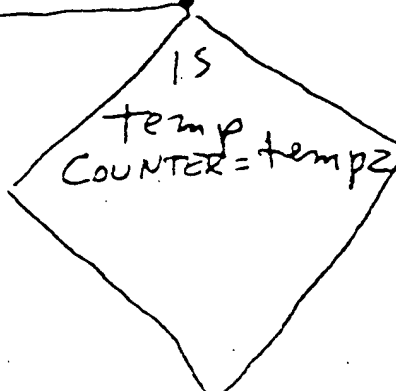
CREATE TEMP2, TEMP3

Fl 619

~~Temp 2 = 0~~ temp2 = 0

~~Let F =~~

303




YES

N/O

Get LIST ELEMENT  
REFERRED TO BY  
TEMP 2

INCREMENT  
TEMP 2




```

graph TD
    D1{CAN VALUE BE ADDED TO TEMP 3 PLUS NUMBER 2 WITHOUT VIOLATING LIMIT}
    D1 -- YES --> P1[PRINT TEMP 3]
    D1 -- NO --> P2[PRINT NUMBER 2]
    P1 --> J1(( ))
    P2 --> J1
    J1 --> E1[END]
  
```

$$\frac{2}{0}$$

Subtract  
From NUMBER1  
(UNINTERRUPTIBLE)

REPORT FAILURE



FINISH

CAN  
LIST ELEMENT  
BE ADDED TO  
TEMP3 PLUS NUMBER2  
WITHOUT  
VIOLATING  
LIMIT

07

YES!

ADDTOTEMP3

MARK AS  
FAILED

# Device for Non-Blocking List MANAGEMENT

## POSSIBLE HARDWARE

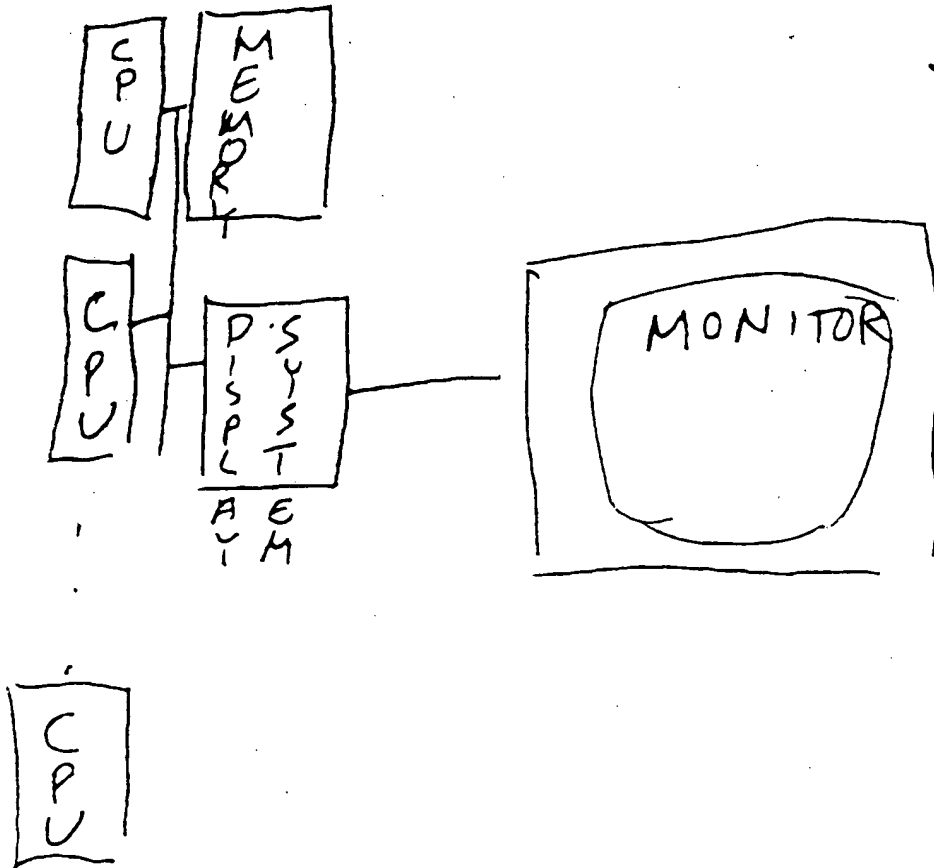
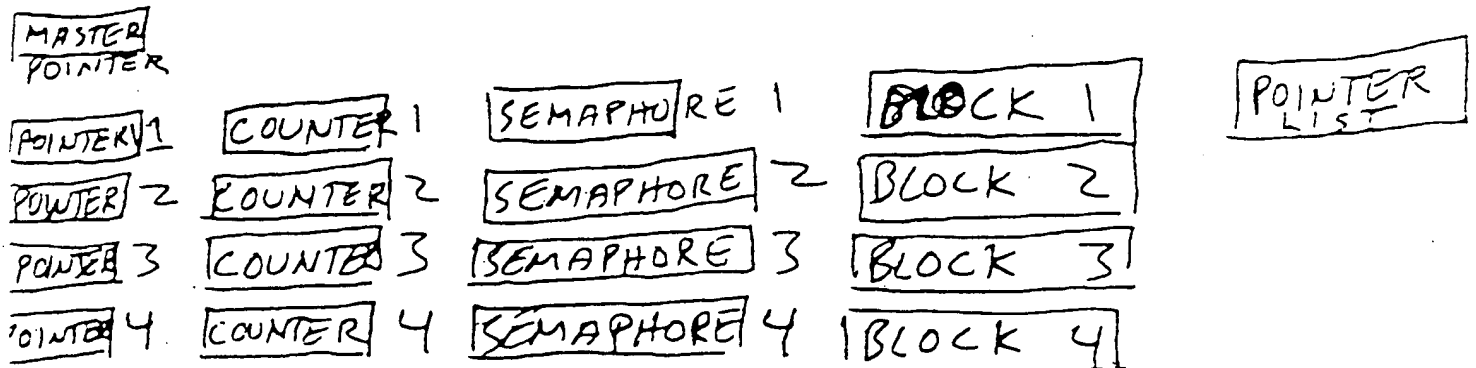


FIG 20

## POSSIBLE MEMORY ORGANIZATION



# REMOVE ITEM FROM LIST

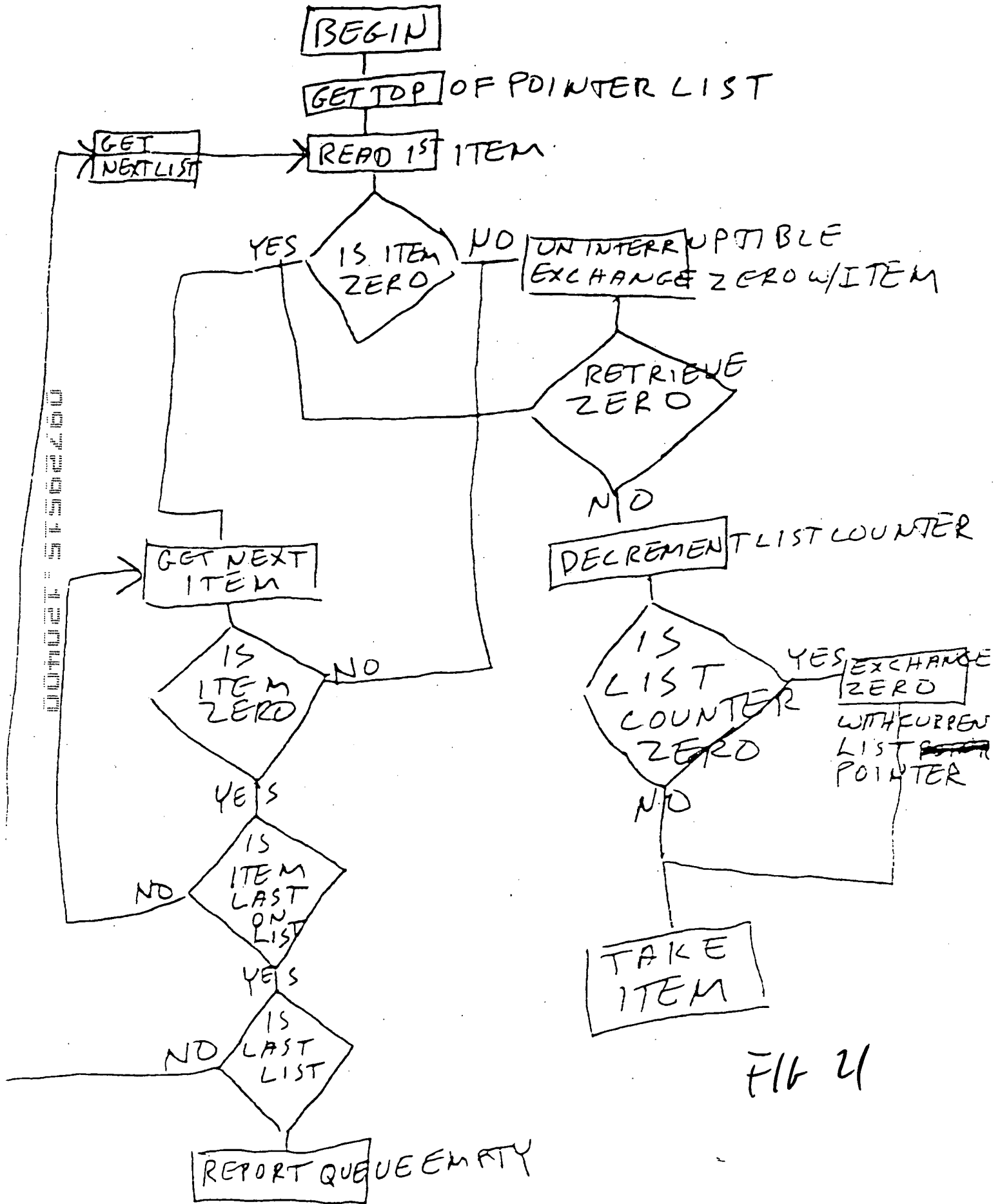


FIG 21

# PLACE ITEM ON LIST

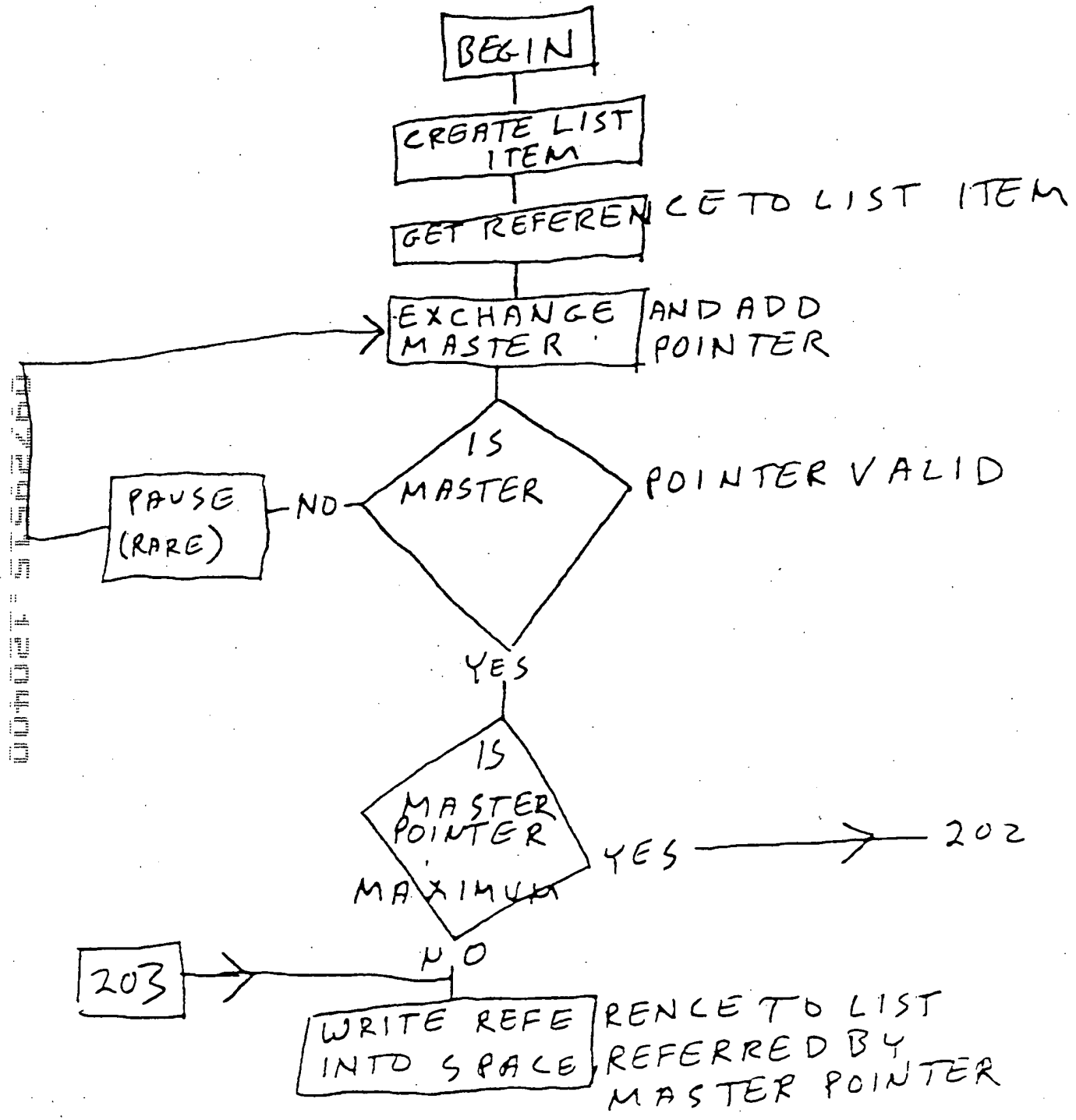
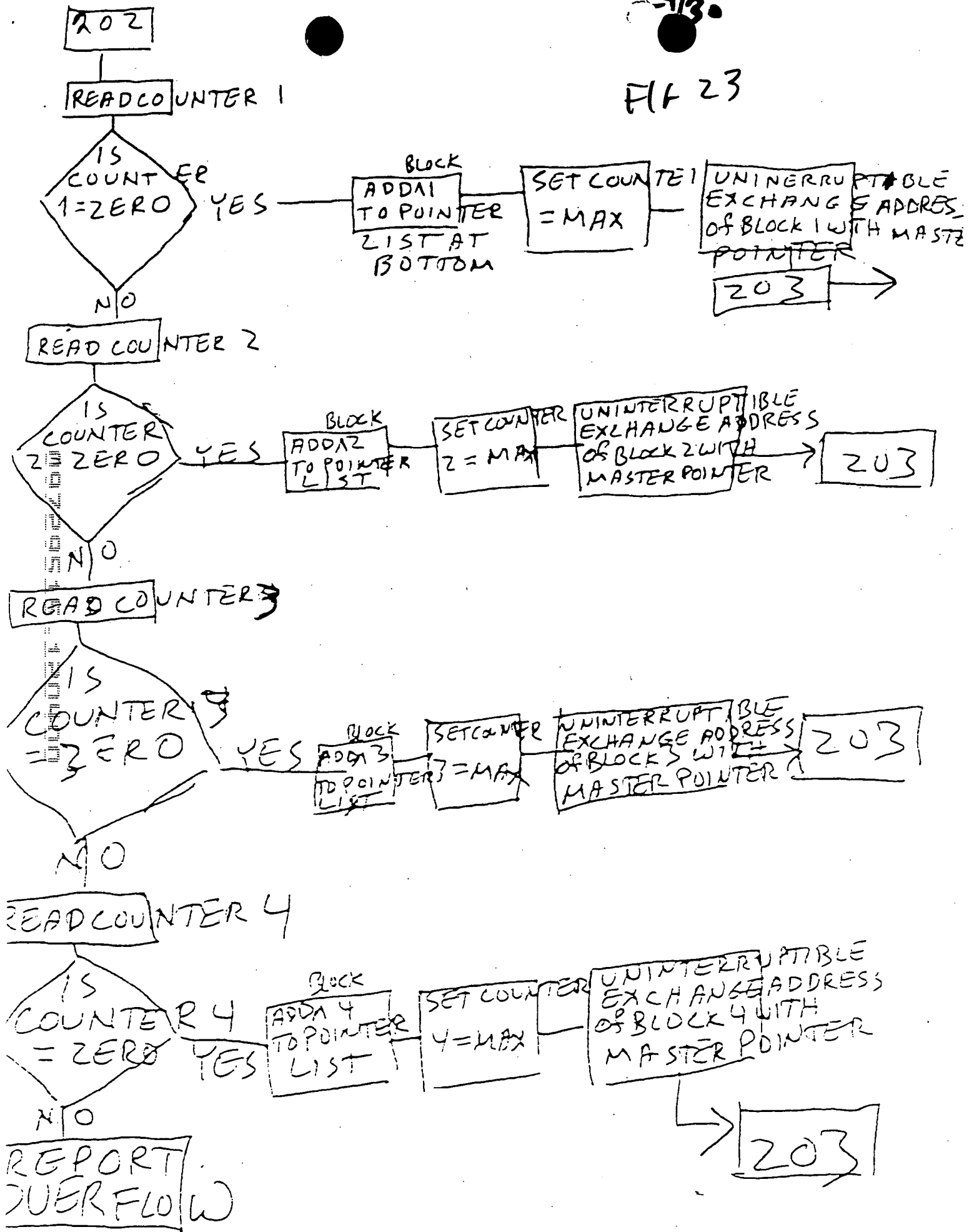


FIG 22

29/3.  
Flt 23



# INITIALIZE LIST

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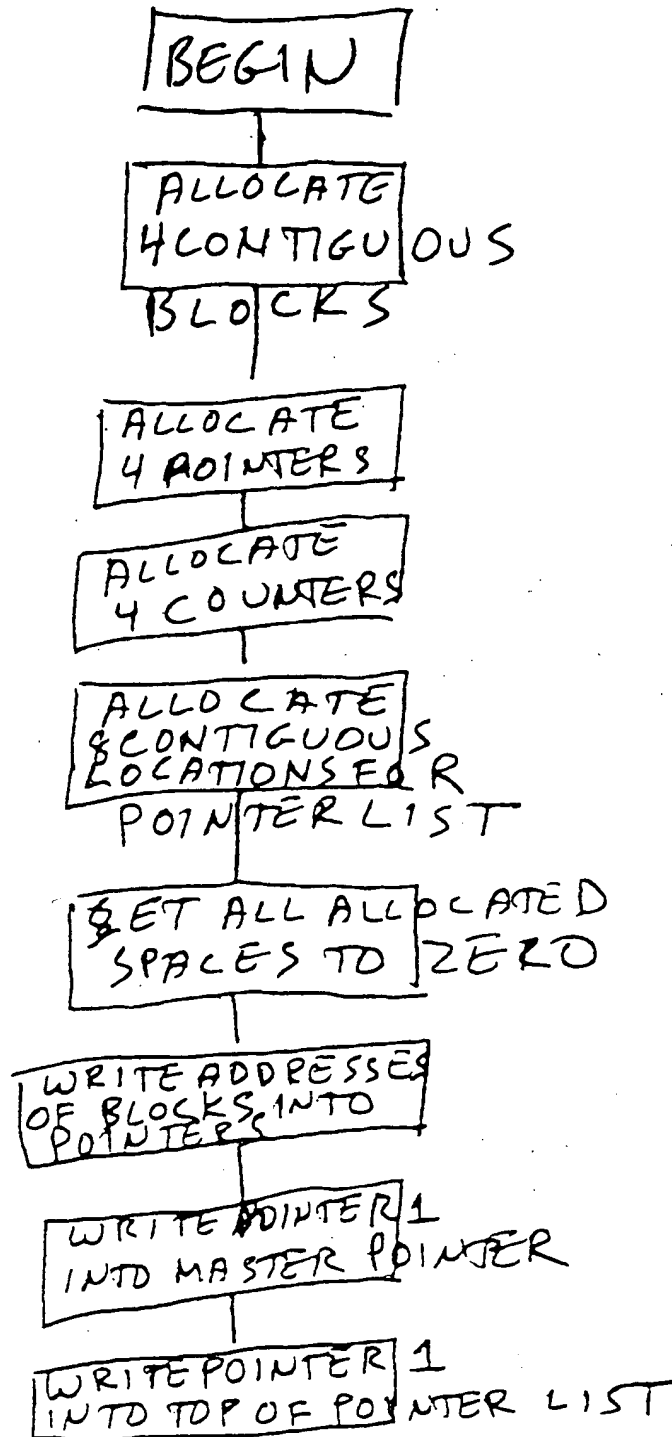
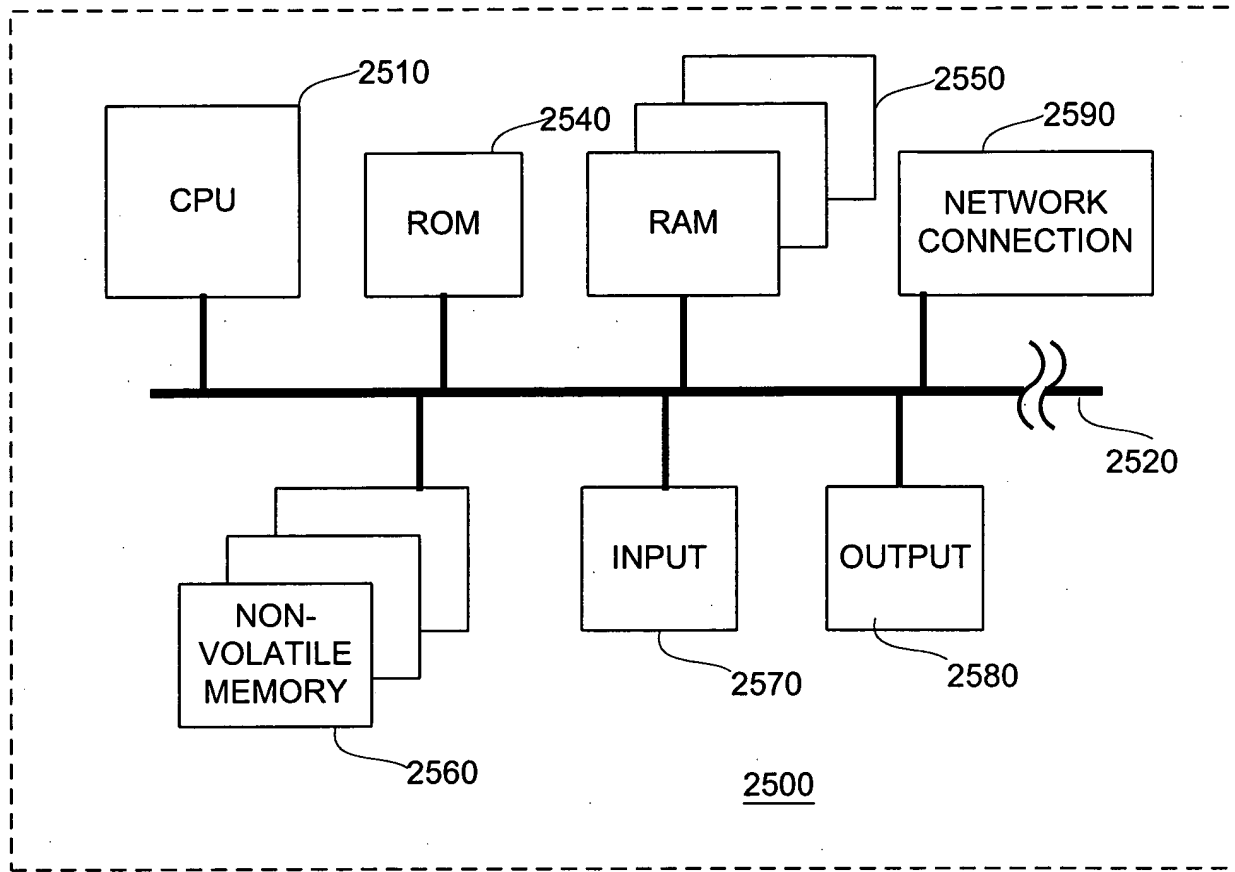
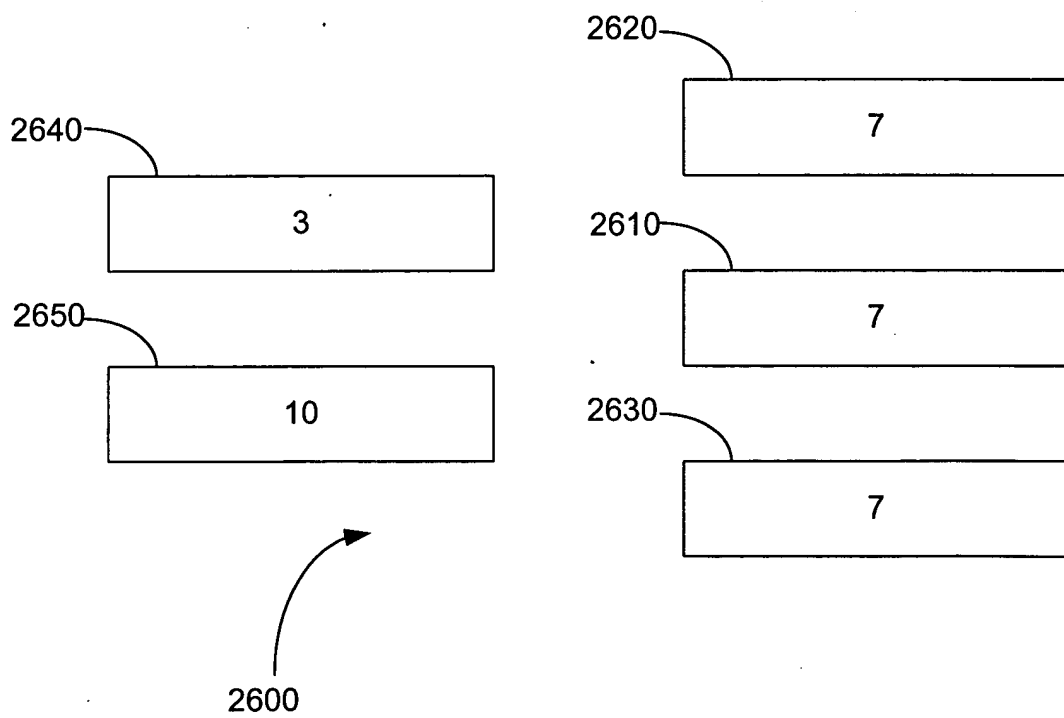


Fig 24



*FIG. 25*

Prior Art



*FIG. 26*



2700

2700

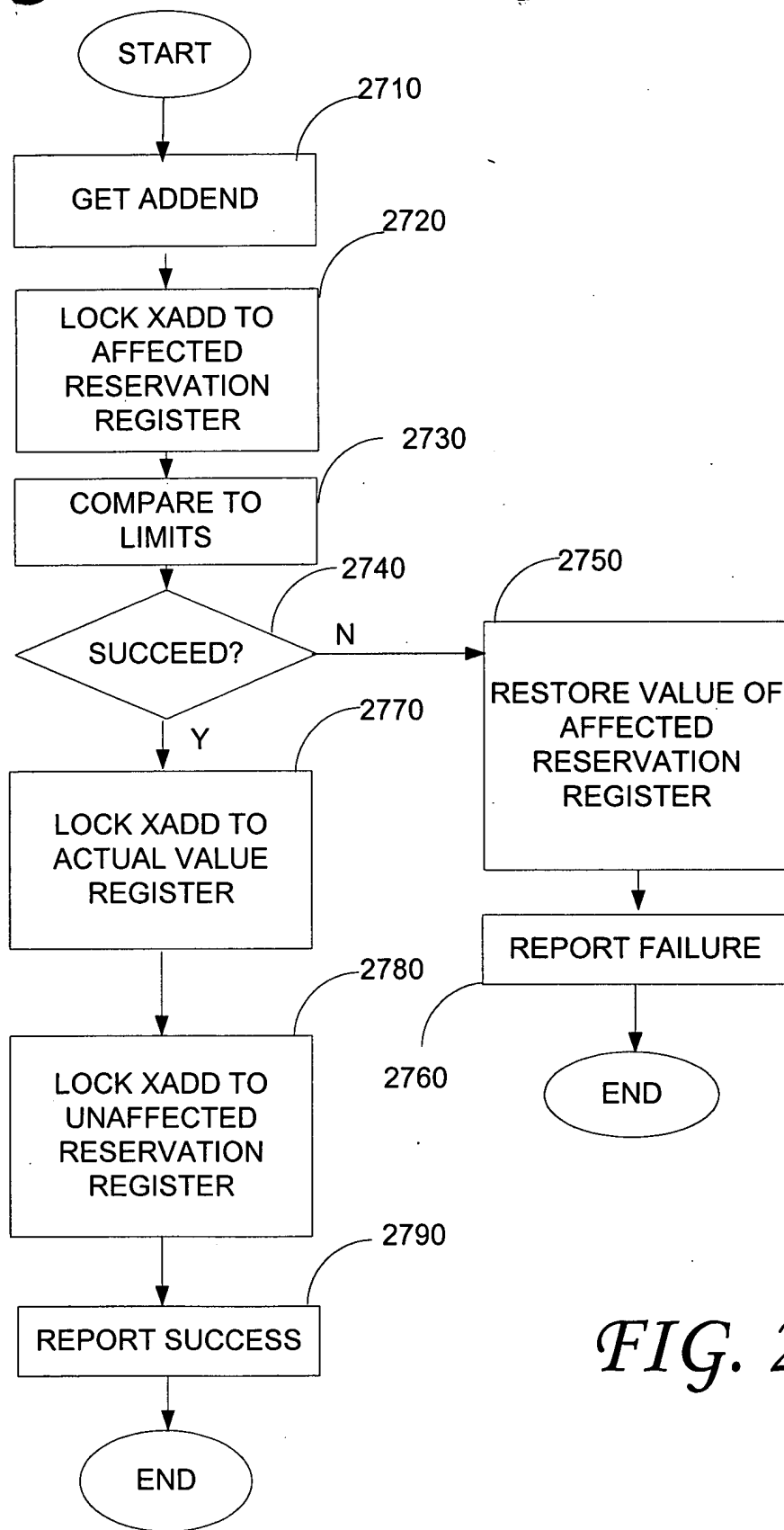


FIG. 27